High Performance School Design

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Introduction

- In 1998 District 11 built 4 new schools
- All 4 are poor energy performers
- Why did this happen
- What we have learned
- What D11 has done to as we get ready to build more new schools

How Could This Have Happened?

- Traditional architect down design approach
- D11 unaware of high performance schools
- Mixed expectations & agendas
- No focus on building lifecycle cost
- Remained passive during design

Traditional Design
Traditional Result

- Good looks, function and comfort
- High energy cost >$0.91/SF/YR
- EPA Energy Star Building Benchmarking average score of 48

What Is High Performance Design?

- Building structure works in concert with mechanical and electrical systems for best building performance
- Example - Make use of natural heating, cooling, ventilation and lighting to reduce building loads = equipment downsizing
- Energy cost about $0.30/SF/YR

Achieving High Performance Design

- D11 hired high performance design process expert
- Must understand high performance design concept
- Very specific building design guidelines
- Set building energy performance benchmarks that must be met by the designers

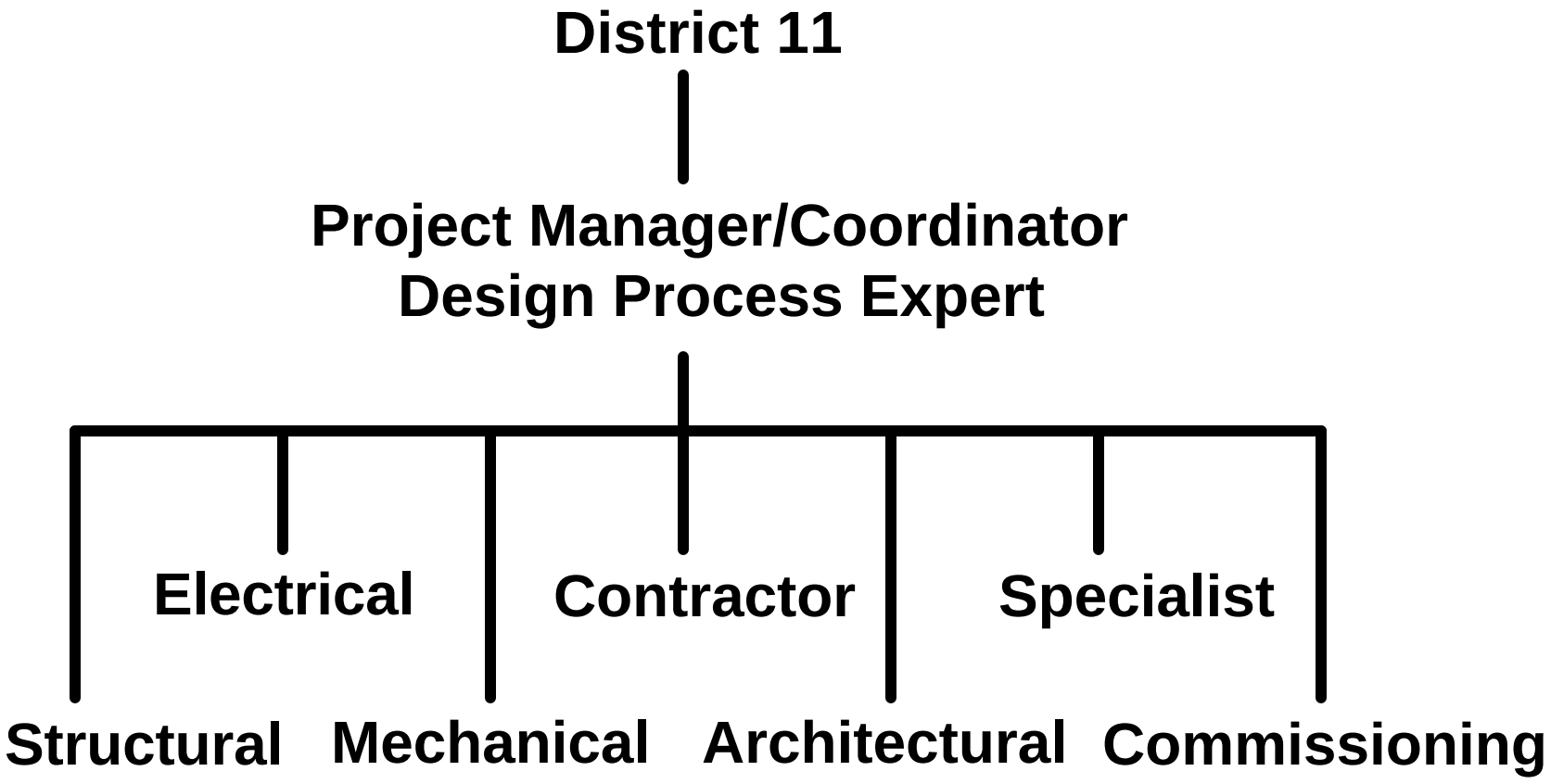
Achieving High Performance Design

- Create a comprehensive RFP
- Give designers the incentive to meet performance goals
- Find the right design team
- Consider a non-traditional design team structure

Finding The Right Design Team

- Use the pre-qualification process
- Proven high performance school experience
- Demonstrable energy performance
- Outside design specialists
- All disciplines to interact freely
- Incentives & accountability through performance based fee structure

Alternative Design Team Structure



D11's New School Performance Benchmarks

• Energy Cost	$0.30/SF/YR
• Energy Use	20KBTU/SF/YR
• Water Use	26 GAL/SF/YR
• Construction Cost	$113/SF
• Maintainability	As per guidelines

Conclusion

- High performance schools are achievable
- They don't have to cost more
- They already exist right here
- Owner must be the driving force in achieving high performance schools
- Most owners will need expert help
- Start now - it will take longer than you think
- It's the right thing to do

More Information

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